Ultrathin tabular grain emulsions with sensitization enhancements (II)

Patent Number:	☐ EP0699946, B1
Publication date:	1996-03-06
Inventor(s):	DEATON JOSEPH CHARLES (US); LIGHTHOUSE JOSEPH CHARLES (US); OLM MYRA TOFFOLON (US); WILSON ROBERT DON (US); WEN XIN (US); BLACK DONALD LEE (US); DAUBENDIEK RICHARD LEE (US); GERSEY TIMOTHY RICHARD (US)
Applicant(s)::	EASTMAN KODAK CO (US)
Requested Patent:	☑ JP8171162
Application Number:	EP19950420235 19950821
Priority Number (s):	US19940297430 19940826; US19940296562 19940826; US19940297195 19940826; US19940359251 19941219; US19950451881 19950526
IPC Classification:	G03C1/005
EC Classification:	G03C1/005T
Equivalents:	DE69519906D, DE69519906T

Abstract

A chemically and spectrally sensitized ultra-thin tabular grain emulsion is disclosed including tabular grains (a) having ä111ü major faces, (b) containing greater than 70 mole percent bromide and at least 0.25 mole percent iodide, based on silver, (c) accounting for greater than 90 percent of total grain projected area, (d) exhibiting an average equivalent circular diameter of at least 0.7 mu m, and (e) exhibiting an average thickness of less than 0.07 mu m. It has been observed that faster rates of development, relatively thinner tabular grains under comparable conditions of preparation, increased contrast and improvements in speed-granularity relationships can be realized when (1) the tabular grains contain less than 10 mole percent iodide and (2) the surface chemical sensitization sites include epitaxially deposited silver halide protrusions of a face centered cubic crystal lattice structure of the rock salt type forming epitaxial junctions with the tabular grains, the protrusions (a) being restricted to those portions of the tabular grains located nearest peripheral edges of and accounting for less than 50 percent of the ä111ü major faces of the tabular grains, (b) containing a silver chloride concentration at least 10 mole percent higher than that of the tabular grains, and (c) including a higher iodide concentration than those portions of the tabular grains extending between the ä111ü major faces and forming epitaxial junctions with the protrusions. A photographic element is disclosed in which an ultrathin tabular grain emulsion as described above is coated over an emulsion layer intended to record visible light.